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VEHICLE-TO-VEHICLE BATTERY SHARING SYSYTEM

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ABSTRACT: Battery powered electric vehicles are gaining fashionability worldwide. This trend is driven by several factors including the need to reduce air and noise pollution, and dependence on fossil energies. The main debit of moment's electric vehicle is its limited range, and the long time duration that's needed to charge the electric batteries. In recent times, significant progress(through exploration and development) has been made to accelerate the charging time of the electric vehicle batteries through palpitation charging rather than supplying nonstop current and/ or voltage. The part to be concentrated on estimation of electrical parameters of the battery in the electrical vehicle, which is the most important factor to get information about possible available driving range. If the quantum of remaining battery capacity can be displayed for the motorist also it's possible to make decision on the time of recharging or they can use the battery sharing system. To know battery geste under different conditions, it's necessary to know colorful battery performance parameters.

Keywords: battary, Relay, Arduino UNO, voltage controller 7805, System circuit.

I.INTRODUCTION

currently, energy effectiveness is a top precedence, boosted by a major concern with climatic changes and by the soaring oil painting prices in countries that have a large reliance on imported reactionary energies. Large portion of oil painting consumption is in road vehicle run for transportation system by 2030 as per the report made by transnational energy outlook, transportation sector will increased its oil painting consumption share in world request is over to the 55(1). Aiming an enhancement of energyeffectiveness, are elaboration in the transportation sector is being done. Large quantum of plutocrat are spending in the exploration to modernize power electronics, mechanical structures and information and control system of electrical transportation system. lately, electric vehicles(EVs) have grown fleetly as demanded green energy from the world. substantially in metro metropolises air pollution is due to CO2 emitted by conventional gasoline vehicles. Now a day development in electrical vehicles is going to give volition for conventional vehicle machine i.e. ICE(2)(3), development is going on in Battery Electric Vehicles(BEV), Plug- in Hybrid Electric Vehicles(PHEV), in its different configurations(3), and Energy- Cell Electric Vehicles(FCEV). Also, experimenters are working on the battery technology for EVs to gain a high rate of charging. thus, advanced number of EV s will be used in the coming many times. It's anticipated that further than 5 million EV s will be employed by 2020. Generally, EVs can run for 100 km, so a charging station is needed as a gas station. There are three important issues for a charging station quick charge(lower than 30 twinkles), long battery continuance(low temperature rise during charge), and standardization(all vehicle providers can be used)(1)(2). Constant current(CC) and constant voltage(CV) system are typically used for a battery bowl. CC provides shorter time for charging a battery with advanced temperature rise; whereas, CV offers low temperature rise with longer charging time. With the limit of voltage per cell(V/ Icell) and maximum charging current(Imax) from battery providers, CC and CV system can not meet the 30 twinkles charging time and low temperature rise conditions from EV druggies(3). For rapid-fire charging at high current rate palpitation charging technology is stylish choice. In this system of charging the rated values of Voltage per cell and maximum current supplied with advanced peak voltage and current. Hence charging time is reduced as compare to conventional charging system.

(5)(6). Central part of Electrical Vehicles draw- to- bus(PTW) drive train effectiveness is Charger. Plug to battery energy inflow is the middle stage of charging.

EVs are decreasingly popular, as demonstrated by the multitudinous vehicles lately made available in the request by nearly all automakers. The main energy storehouse systems of these vehicles are the electrochemical batteries, the ultracapacitors and the full-cells. still, taking into account currently limits of energy storehouse of those technologies, the vehicles have limited range autonomy. Different energy storehouse systems configurations can be enforced, still, the electrochemical batteries still are the most habituated technology to store energy. nonetheless, they're generally used in confluence with ultracapacitors to store energy during flash moments, as during the vehicle regenerative retardation. Actually, the ultracapacitors are used in this way to admit a significant quantum of energy in a short time, and to give this energy to the coming acceleration, or to help charging the batteries

II. LITERATURE REVIEW

Teslarati. 2017. et Al(1) " Tesla battery declination analysis reveals how long a battery might last. " Teslanomics by Ben Sullins looks to answer the age-old question asked by likely every Tesla proprietor and would- be buyer of the luxury electric auto how long will my Tesla battery last? By assaying battery declination data that's been crowdsourced by Tesla possessors worldwide – first collected by Maarten Steinbuch in a Google distance – Teslanomics aims to help possessors more fantasize the anticipated range loss in their Tesla over time. Maarten first tapped into a Dutch Belgium Tesla forum to initiate data gathering which needed Model S possessors to completely drain their Tesla battery to a near- zero state of charge before charging it back to a 100 capacity. The process theoretically will give the most delicacy in terms of determining a battery's true capacity. This is contrary to early beliefs that a battery undergoes a" training effect" if not completely depleted and charged to full capacity. Tesla possessors that constantly charged to a state of charge between 50 to 75 frequently reported seeing lower overall battery range, presumably because the charge state within each spherical lithium- ion cell that makes up the overall battery pack is" out of balance ". Ben's analysis of battery state of charge data by vehicle age, number of battery charges, and number of long hauls/ km driven can be imaged through an interactive map which we handed below. The data can also be farther broken down by region.

III. MODELING AND ANALYSIS

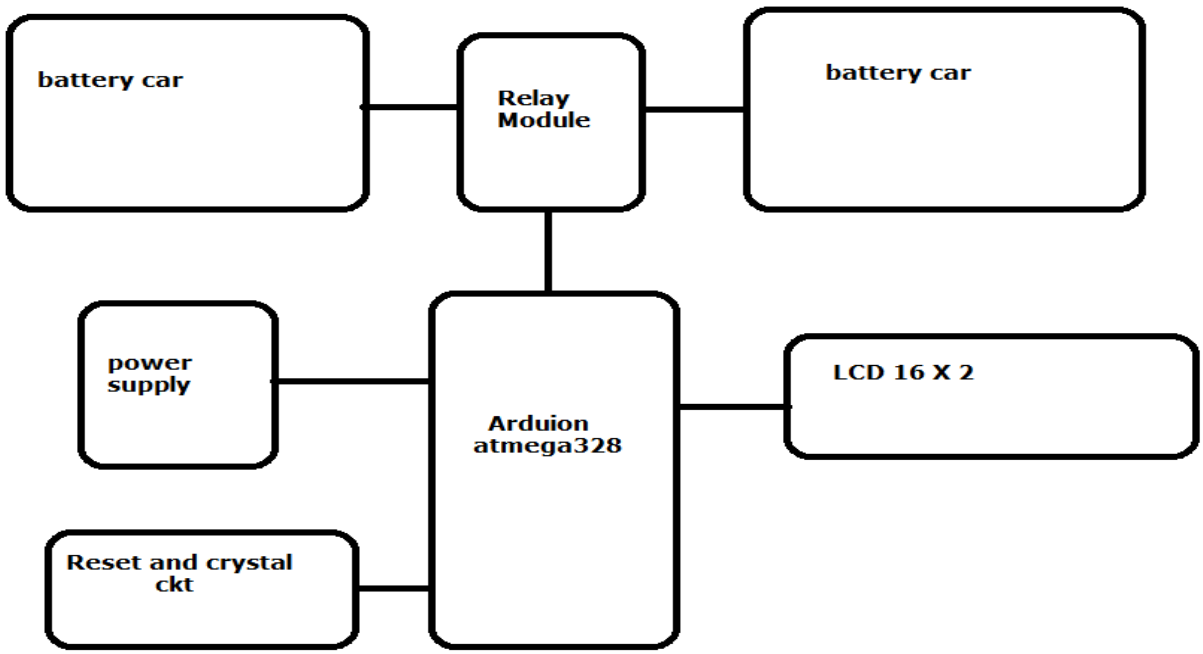

Figure1: Block Diagram battery sharing system

All the circuit connections are shown in a circuit illustration. The main system is powered by a 12V/ 12Amp Rechargeable battery. The battery is transferred from the source battery to the Gomorrah battery. After connecting the force will go into the power force through the switch. We've used IC7812. also the force is transferred to the Arduino Uno board then IC7805 is used in Atmega328. It's the brain of the whole system which controls all operations for that we've programmed as per ourrequirements.LCD and keypad are

connected to Arduino using this we can give time for how long it'll get transferred. The relay is connected for switching purposes as the force follows relay will give a signal. After a given time battery will get transferred for a particular period. The law is written in Bedded C language and uploaded by using Arduino Board and the law is written in software Arduino IDE

IV.RESULTS

1. Connect the connector to the system.
2. Turn on the switch.
3. Press on keyboard keys(charging share eg 5 min, 30 min)
4. also automatically charging participating on & indicates red light.
5. When time is up the rally turns off And the charging sharing stops.

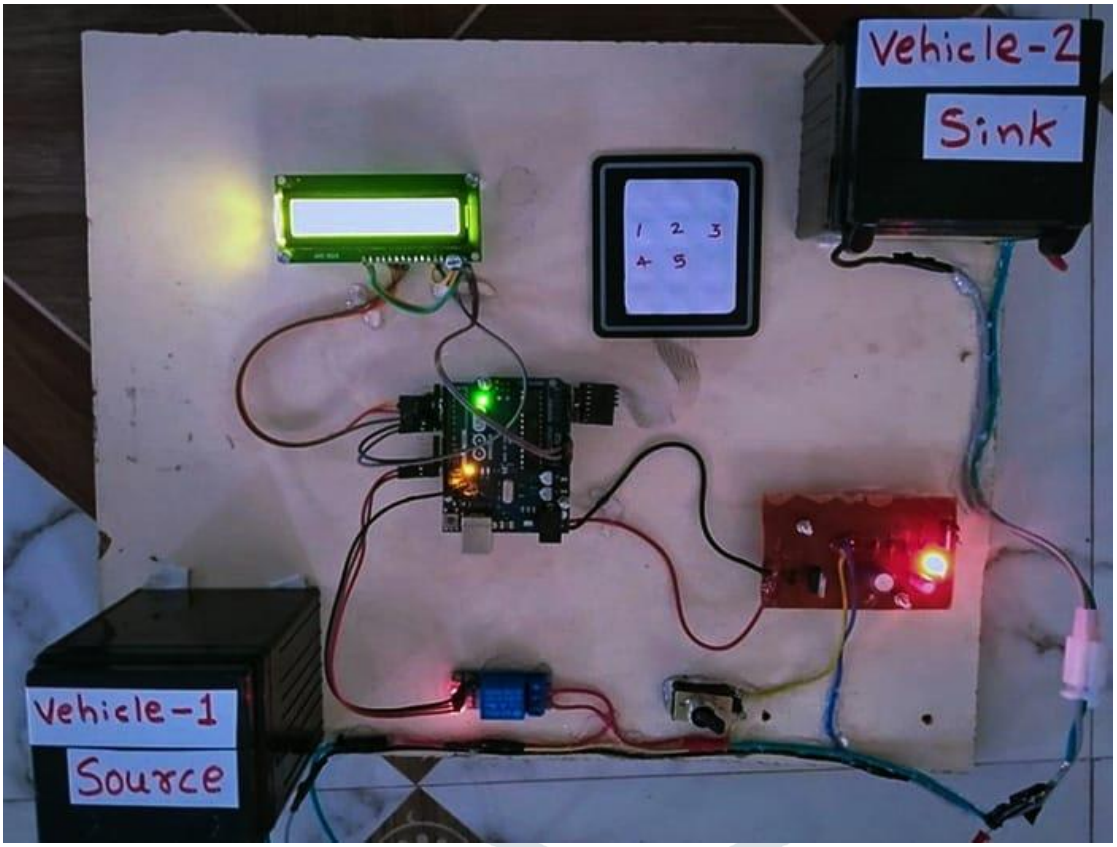

Figure2: Running Mode of design

VI. CONCLUSION

thus in this design, we've developed an innovative battery sharing system for EVs The system works duly and we can fluently operate this device. We can use this device in extremities. EV is the future of the world EV isn't giving that important normal, so that is why this device is also the future of the world. We've testedE-vehicles toE-vehicle battery sharing system successfully**.**

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